

IN THE CLAIMS

A Listing of the Claims appears below for the Examiner's convenience:

Claim 1 (Previously Presented): An apparatus for transmitting user equipment specific update control information from a base station to a user equipment in a cellular communication system; the apparatus comprising:

a processor that combines user equipment specific update control information for a plurality of user equipment to generate combined user equipment specific update control information;

an encode processor that encodes the combined user equipment specific update control information for at least two of the plurality of user equipment, wherein forward error correction coding is applied to the combined user equipment specific update control information for the plurality of user equipment; and

a transmitter that transmits the encoded combined user equipment specific update control information in a common physical control channel received by the plurality of user equipment.

Claim 2 (Previously Presented): An apparatus as claimed in claim 1 wherein the transmitter is operable to transmit the encoded combined user equipment specific update control information in a single allocation of transmission resource that is a time slot.

Claim 3 (Previously Presented): An apparatus as claimed in claim 1 wherein the transmitter is operable to transmit the encoded combined user equipment specific update control information in a single allocation of transmission resource that is a single time code frequency resource allocation unit.

Claim 4 (Cancelled)

Claim 5 (Previously Presented): An apparatus as claimed in claim 1 wherein the encode processor for encoding encodes user equipment specific update control information associated with all user equipment of the plurality of user equipment.

Claim 6 (Cancelled)

Claim 7 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information comprises a plurality of parameters each having a number of possible values, and wherein the encode processor for encoding encodes the plurality of parameters by encoding a combined parameter having a combined number of possible values equal to the product of the number of possible values of the plurality of parameters.

Claim 8 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information comprises power control information.

Claim 9 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information comprises synchronisation information.

Claim 10 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information comprises only synchronisation information.

Claim 11 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information is associated with an uplink channel from each of the plurality of user equipment.

Claim 12 (Previously Presented): An apparatus as claimed in claim 1 further comprising a controller for setting a transmit power for the encoded combined user equipment specific update control information in response to a transmit power requirement of the plurality of user equipment.

Claim 13 (Previously Presented): An apparatus as claimed in claim 1 wherein the transmitter transmits position information indicative of a position of user equipment specific update control information for a first user equipment.

Claim 14 (Previously Presented): An apparatus as claimed in claim 1 wherein the user equipment specific update control information is control information associated with High Speed Downlink Packet Access (HSDPA) service.

Claim 15 (Previously Presented): An apparatus as claimed in claim 14 wherein the user equipment specific update control information is associated with an uplink dedicated physical channel (DPCH) of the HSDPA downlink packet data service.

Claim 16 (Previously Presented): An apparatus as claimed in claim 1 wherein the encode processor for encoding encodes the combined user equipment specific update control information by using processing algorithms of a group of algorithms used by a plurality of services.

Claim 17 (Previously Presented): An apparatus as claimed in claim 1 wherein the cellular communication system is a Time Division Duplex (TDD) cellular communication system.

Claim 18 (Original): An apparatus as claimed in claim 16 wherein the cellular communication system is the UTRA (UMTS (Universal Mobile Telecommunication System) Terrestrial Radio Access) TDD cellular communication system specified by the 3rd Generation Partnership Project.

Claim 19 (Previously Presented): An apparatus as claimed in claim 18 wherein the user equipment specific update control information consists of Transmit Power Control (TPC) and Synchronisation Shift (SS) data.

Claim 20 (Previously Presented): An apparatus as claimed in claim 1 further comprising a processor for determining a transmit power of the encoded combined user equipment specific update control information in response to a number of user equipment for which the encoded combined user equipment specific update control information comprises user equipment specific update control information.

Claim 21 (Previously Presented): An apparatus as claimed in claim 1 further comprising a processor for determining an encoding process for the encoded combined user equipment specific update control information in response to a number of user equipment for which the encoded combined user equipment specific update control information comprises user equipment specific update control information.

Claim 22 (Previously Presented): An apparatus as claimed in claim 21 wherein the encoded combined user equipment specific update control information does not comprise verification data.

Claim 23 (Previously Presented): An apparatus as claimed in claim 1 wherein the transmitter for transmitting transmits user equipment specific update control information for a first user in intermittent single allocations of transmission resources.

Claim 24 (Previously Presented): An apparatus as claimed in claim 1 wherein the transmitter is operable to transmit the combined user equipment specific update control information in a single allocation of transmission resource that corresponds to a minimum size transmission block of user equipment specific update control information which can be transmitted by the transmitter.

Claim 25 (Previously Presented): An apparatus as claimed in claim 1 wherein the apparatus is a base station.

Claim 26 (Previously Presented): A user equipment for receiving user equipment specific update control information from a base station in a cellular communication system; the user equipment comprising:

a receiver that receives encoded combined user equipment specific update control information for at least two of a plurality of user equipment in a common physical control channel received by the plurality of user equipment;

a decoder that decodes the combined user equipment specific update control information, wherein the decoding comprises forward error correction decoding; and  
a processor that determines user specific update information for the user equipment from the encoded combined user equipment specific update control information.

Claim 27 (Previously Presented): A user equipment as claimed in claim 26 wherein the processor decodes the encoded combined user equipment specific update control information and select the user equipment specific update control information for the user equipment.

Claim 28 (Previously Presented): A cellular communication system comprising  
a first apparatus that transmits user equipment specific information from a base station to a user equipment, the first apparatus comprising:

a processor that combines user equipment specific update control information for a plurality of user equipment to generate combined user equipment specific information,

an encode processor that encodes the combined user equipment specific update control information for at least two of the plurality of user equipment, wherein forward error correction coding is applied to the combined user equipment specific update control information for the plurality of user equipment, and

a transmitter that transmits the encoded combined user equipment specific update control information in a common physical control channel received by the plurality of user equipment; and

the user equipment comprising:

a receiver that receives encoded combined user equipment specific update control information for at least two of the plurality of user equipment;

a decoder that decodes the combined user equipment specific update control information, wherein the decoding comprises forward error correction decoding; and

a processor that determine user specific update control information for the user equipment from the encoded combined user equipment specific update control information.

Claim 29 (Previously Presented): A method of transmitting user equipment specific update control information from a base station to a user equipment in a cellular communication system; the method comprising, at a base station:

combining user equipment specific update control information for a plurality of user equipment to generate combined user equipment specific update control information;

encoding the combined user equipment specific update control information for at least two of the plurality of user equipment, wherein forward error correction coding is applied to the combined user equipment specific update control information for the plurality of user equipment; and

transmitting the encoded combined user equipment specific update control information in a common physical control channel received by the plurality of user equipment.

Claim 30 (Previously Presented): A method of receiving user equipment specific update control information from a base station in a cellular communication system; the method comprising, at a user equipment:

receiving encoded combined user equipment specific update control information for at least two of a plurality of user equipment in a common physical control channel received by the plurality of user equipment;

decoding the combined user equipment specific update control information, wherein the decoding comprises forward error correction decoding; and

determining user specific update information for the user equipment from the encoded combined user equipment specific update control information.

Claim 31 (Cancelled)

Claim 32 (Previously Presented): An apparatus as claimed in claim 5 wherein the user equipment specific update information comprises a plurality of parameters each having a number of possible values, and wherein the encode processor for encoding is operable to encode the plurality of parameters by encoding a combined parameter having a combined number of possible values equal to the product of the number of possible values of the plurality of parameters.

Claim 33 (Previously Presented): The user equipment of claim 26, wherein the receiver receives the encoded combined user equipment specific update control information in a single allocation of transmission resource that is a time slot.

Claim 34 (Previously Presented): The user equipment of claim 26, wherein the decoder decodes user equipment specific update control information associated with all user equipment of the plurality of user equipment.

Claim 35 (Previously Presented): The user equipment of claim 26, wherein the user equipment specific update control information comprises power control information.



Claim 36 (Previously Presented): The user equipment of claim 26, wherein the user equipment specific update control information is associated with an uplink channel from each of the plurality of user equipment.

Claim 37 (Previously Presented): The user equipment of claim 26, wherein the receiver receives position information indicative of a position of user equipment specific update control information for a first user equipment.